

## ONE-STEP 접착제의 상아질 접착에 관한 연구

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### Abstract

#### A STUDY ON THE DENTIN BONDING OF ONE-STEP BONDING AGENT

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The purpose of this study was to observe the morphologic change of dentinal surface, adhesion in interface between dentin and bonding agents, and penetration pattern of resin tags into dentinal tubules according to bonding procedure of ONE-STEP universal adhesive system.

Ten extracted human molars were mounted in dental stone and sectioned to expose mid-coronal occlusal dentin and again sectioned tooth crown apically. Specimens were randomly assigned to three groups for dentin conditioning with 32% phosphoric acid, two coats of bonding agents after dentin conditioning, and bond of composite resin.

The surfaces of dentin were treated with etchant and applied bonding agent, and bonded composite resin according to the directions of manufacturer.

Specimens which were bonded composite were sectioned longitudinally for observing interfaces between resin and dentin. Two of specimens which were sectioned longitudinally were immersed in 6 N HCL for 30 seconds and 1% NaOCL for 12 hours to partially demineralize and deproteinize the dentin substrate.

Each specimen was mounted on a brass stub, sputter-coated with gold and observed under SEM.

\*이 논문은 1996년도 조선대학교 학술연구비의 지원을 받아 연구되었음











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## 사진부도 설명

- Fig. 1. The smear layer is removed and the orifices(OF) of tubules are 3~5 $\mu$ m wide. SEM $\times$ 2,000
- Fig. 2. Dentinal surface(DS) is irregular in longitudinal section. SEM $\times$ 2,500
- Fig. 3. Resin particles(P) are dispersed on the orifices of tubules and intertubular dentin. SEM $\times$ 1,000
- Fig. 4. Higher magnification of Fig. 3. SEM $\times$ 2,500
- Fig. 5. No gaps are present in the interface between composite resin(C) and dentin(D). SEM $\times$ 800
- Fig. 6. Composite resin(C) invades into dentin(D) like a finger and 1~3 $\mu$ m wide hybrid(H) layer is present in the interface between composite and dentin. SEM $\times$ 5,000
- Fig. 7. Long and funnel shaped resin tags(T) are showed in demineralized specimens and 2~3 $\mu$ m wide hybrid layer is present. SEM $\times$ 800
- Fig. 8. The surfaces of resin tags(T) are rough. SEM $\times$ 3,300

